

REMARKS

In the Office Action, the Examiner rejected claims 1-24 and 26-29. By the present Response, Applicants have amended claims 1, 12, 20, and 27, and added new claim 30. Upon entry of the amendments, claims 1-24 and 26-30 will be pending in the present patent application. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

Objections to the Drawings

In the Office Action, the Examiner objected to the drawings under 37 C.F.R. § 1.83(a) for failing to “show every feature of the invention specified in the claims.” *See* Office Action mailed June 3, 2005 (hereinafter “Office Action”), p. 2. Specifically, the Examiner asserted “the ‘electrical device’ in claims 20-22, 27, and ‘the component’ in claims 20-22, 24 must be shown or the feature(s) cancelled from the claim(s).” *See id.*

Respectfully, Applicants disagree agree with the Examiner’s assertions and, further, submit that the drawings of the present application are in compliance with all appropriate regulations. Although 37 C.F.R. § 1.83(a) requires that the drawings of a non-provisional patent application show every feature specified in the claims, this regulatory section also states that “conventional features disclosed in the description and claims, where their detailed illustration is *not essential for a proper understanding* of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box).” (Emphasis added.) In view of the foregoing, and beginning with the recitation “electrical device,” Applicants respectfully direct the Examiner’s attention to ¶ [0017] of the present application, which describes the various electronic devices illustrated and labeled in FIG. 1. Again, these electronic devices—exemplified and respectively labeled as a desktop computer “12,” a monitor “14,” a peripheral device “16,” or a notebook computer “18”—are illustrated as labeled rectangular prisms in FIG. 1 of the present application. As labeled, Applicants

respectfully submit that one of ordinary skill in the art would appreciate the intricacies of these electronic devices. Thus, the labeled prisms of FIG. 1 are in accordance with 37 C.F.R. § 1.83(a). Furthermore, in regard to the recitation “the component,” Applicants respectfully direct the Examiner’s attention to ¶ [0020] of the present application, which textually describes FIG. 3. Indeed, this paragraph clearly identifies the rectangular box labeled “33” of FIG. 3 as representative of components. This identification coupled with the fact that those of ordinary skill in the art would appreciate the intricacies of what a component of an electrical device would entail demonstrates that FIG. 3 of the present patent application, as well as the other figures, are in compliance with 37 C.F.R. § 1.83(a).

In summary, Applicants respectfully request that, based on the foregoing, the Examiner withdraw the objection to the drawings.

Rejections Under 35 U.S.C. § 112

In the Office Action, the Examiner rejected claims 20-22, 24 and 27 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner stated as follows:

In claims 20-22, 24, and 27, the terms “a system”, “electrical device”, and “the components” lacks proper antecedent in that it renders the claims [*sic*] language vague and indefinite. As is presented, the elements required in making up the referenced components are unknown.

Office Action, p. 3.

Applicants, however, respectfully disagree with the Examiner’s assertions and traverse the rejections, because the above-listed claim terms are not indefinite and, thus, in compliance with § 112, second paragraph. Section 112, second paragraph, requires

that an applicant's claims particularly point out and distinctly claim the subject matter which an applicant regards as his invention. To satisfy this threshold, claim recitations must allow one skilled in the art to understand the bounds of the claim when read in light of the specification. *See Exxon Research and Engineering cov United States*, 60 U.S.P.Q. 2d 1272, 1276 (Fed. Cir. 2001). Thus, it is only if "a claim is *insolubly ambiguous*, and no narrowing construction can be properly adopted" can a claim be held as indefinite. *See id.* (Emphasis added). The Federal Circuit has made clear that "[i]f the meaning of a claim is discernable even though the task may be formidable and the conclusions may be one over which reasonable persons will disagree," the claim will be viewed sufficiently clear to avoid indefiniteness. *See id.* Accordingly, Applicants submit that Section 112, second paragraph, does not present an *ipsis verbis* (in identical words) requirement between the specification and the chosen claim terms. The only requirement is that claim terms be discernable. Additionally, the court of Customs and Patent Appeals has expressly warned that "*breath is not to be equated with indefiniteness*, as we have said many times." *See In re Miller*, 169 U.S.P.Q. 597, 600 (C.C.P.A. 1971) (emphasis added). Thus, in summary, if the meaning of a claimed term is discernable, then that claimed term cannot be held as indefinite under Section 112, second paragraph.

Keeping the foregoing precedent in mind, Applicants respectfully assert that the recitations "a system," "electrical device," and "components" are not indefinite, because those of ordinary skill in the art would be able to discern the meaning of these terms in view of the specification. Indeed, as a general theme, it appears that the Examiner has improperly equated breath with indefiniteness. Beginning with the recitation "a system," Applicants note this recitation is found in the preamble of independent claim 20 and its subsequent dependent claims 21-24 and 26. Thus, as is presented in independent claim 20 and its respective dependent claims, the preamble "a system" is defined by the components recited in the body of the claim. Accordingly, Applicants respectfully submit that one of ordinary skill in the art would not find difficulty in ascertaining the meaning

of “a system.” Moreover, Applicants respectfully direct the Examiner’s attention to ¶ [0017] of the present application, which describes an exemplary “wireless system 10 comprising a desktop computer 12, a monitor 14, a peripheral device 16, and a notebook computer 18.” In view of the foregoing, as well as the application as a whole, Applicants respectfully submit that a person skilled in the art would be able to ascertain the meaning of the preamble term “a system,” as is presented in the claims of the present patent application.

Turning now to the recitation “electrical device,” Applicants respectfully submit that this recitation is neither vague nor indefinite. Indeed, Applicants respectfully submit that one of ordinary skill in the art would appreciate what an electrical device entails. Moreover, Applicants’ specification includes the term “electronic devices” and provides exemplary embodiments thereof. For example, in ¶ [0017] of the present application, a wireless system 10 is described as having varying quantities and types of electronic devices, of which examples are given: a desktop computer 12, a monitor 14, a peripheral device 16, and a notebook computer 18, a personal digital assistant. Thus, in view of the specification, Applicants respectfully submit that the recitation “electrical device” is neither vague nor indefinite and, thus, complies with Section 112, second paragraph.

Concluding with “components,” Applicants respectfully assert this recitation, too, is neither vague nor indefinite. In view of the specification, which provides an exemplary description of components, Applicants respectfully submit that one of ordinary skill in the art would be able to ascertain the meaning of the term “components.” As support, Applicants direct the Examiner’s attention to ¶ [0020] of the present application, which describes enumerated element 33 of FIG. 3 as components of an electrical device. Based on the foregoing, Applicants respectfully submit that the recitation “components” is neither vague nor indefinite and, thus, in compliance with Section 112, second paragraph.

In view of the foregoing, Applicants respectfully request withdrawal of the Examiner's Section 112, second paragraph, rejections.

Rejections Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-18 under Section 102(b) as anticipated by the Pirilä et al. reference (U.S. Patent No. 6,417,817; hereinafter "Pirilä"), and claims 20-28 under Section 102(e) as anticipated by the Mendolia et al. reference (U.S. Patent No. 6,867,746; hereinafter "Mendolia"). As discussed in turn below, Applicants respectfully assert that neither Pirilä nor Mendolia supports a *prima facie* case of anticipation with respect to the pending claims.

Anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. *See Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under Section 102, every element of the claimed invention must be identically shown in a single reference. *See In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Moreover, the prior art reference also must show the identical invention "*in as complete detail as contained in the ... claim*" to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989) (emphasis added). Additionally, for anticipation, the cited reference must not only disclose all of the recited features but must also disclose the *part-to-part relationships* between these features. *See Lindermann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 486 (Fed. Cir. 1984). Accordingly, Applicants need only point to a single element or claimed relationship not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter.

With the foregoing in mind, Applicants respectfully assert that none of the pending claims is anticipated by either Pirilä, or Mendolia, and, as such, these claims are patentable and in condition for allowance.

Summary of an Embodiment

However, prior to addressing the specifics of the Examiner's rejections, Applicants believe that a short review of an exemplary embodiment of the claimed invention will assist in advancing the present application to allowance. In an exemplary embodiment, various devices of a network 10—such as a desktop computer 12, a monitor 14, a peripheral device 16, a notebook computer 18, etc.—are each described as including a radio module 20, 22 for data communications. *See Application, ¶¶ [0017], [0018].*

As illustrated in FIGS. 2-4 of the present application, an exemplary radio module 20 includes an antenna housing that is *adapted to define the amount of loading on the antenna 30*, so that the antenna 30 is not loaded by components 33 disposed external to the radio module and *within the desktop computer 14*, the desktop computer 14 being an example of an electrical device. *See id.* at ¶ 20. Thus, the antenna 30 is shielded from electrical noise produced by the components 33 in the desktop computer 14, or whatever type of electrical device the radio module 20 is disposed in. *See id.*

By shielding the antenna, these components 33 have no substantial effect on the loading of the antenna of the radio module. *See Application, ¶ [0016]. See id.* Accordingly, the radio module does not have to be re-tuned or re-certified if there is a change in the components of the device that are external to the radio module. *See id.* Moreover, the same radio module may be disposed with other electrical devices having different components therein without affecting the radio module. *See id.* For example, the exemplary radio module may be moved from a first desktop computer to a second

desktop computer without significant tuning effects to the module's antenna, despite the fact that the first and second desktop computers may have entirely different components.

First Rejection Under Section 102

In the Office Action, the Examiner rejected claims 1-18 as anticipated by Pirilä. In rejecting independent claims 1 and 12, the Examiner stated as follows:

Regarding claim 1, Pirila et al disclose a radio module for an electrical device, comprising:
- a radio transceiver (104) (Fig. 1);
- an antenna (111) electrically coupled to the radio transceiver (Fig. 2); and
- a shield (Col. 1, Line 36) (Fig. 2) disposed relative to the antenna to isolate the antenna from loading effects of components of the electrical device (Col. 1, Line 15).

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Regarding claim 12, Pirila et al disclose a radio module, comprising:
- a printed circuit board (101) (Fig. 1); an antenna (111) disposed on the printed circuit board (Fig. 2); and an electromagnetic shield (107) extending from the printed circuit board (101) around the antenna (111) (Fig. 2).

Office Action, pp. 3-5.

Applicants, however, respectfully disagree with the Examiner's contentions and submit that Pirilä does not disclose all of the features recited in amended independent claims 1 and 12. For example, Applicants respectfully submit that Pirilä does not disclose "*a shield ...to isolate the antenna from loading effects of components of the electrical device that are external to the radio module,*" as is recited in amended independent claims 1 and 12. (Emphasis added.) In stark contrast, Pirilä describes an assembly in which shields are provided to protect the components of a device from electromagnetic fields *external to the device* in which the module is employed and vice

versa—without any concern of protecting the *antenna of the device from components of the device*. See Pirilä, col. 1, ll. 15-20. Specifically, Pirilä states that:

To shield the components against electromagnetic interference *from external sources, and to keep the stray electromagnetic fields generated by the components from causing interference elsewhere*, the electromechanical structure of the radio transceiver must define a number of enclosures with conductive walls that surround the components and have good contacts to the general ground potential level of the radio transceiver.

See id. (emphasis added). Thus, in Pirilä, nothing suggests that the antenna 111 described therein is protected from de-tuning electromagnetic interference from *within the assembly*. Rather, the shielding of Pirilä is designed to protect the transceivers 104, and not the antenna 111. *See Application*, col. 1, ll. 63-65. Indeed, as one of ordinary skill in the art would appreciate, the antenna 111 of Pirilä would be susceptible to loading effects of other components disposed on the PCB 101, i.e., other components of the device in which the PCB resides. That is, if, for example, the Pirilä assembly were to be placed into a desktop computer, the antenna 111 of Pirilä would be susceptible to the loading effects of the various components of the desktop computer itself. Thus, Pirilä does not disclose the structure recited in independent claims 1 and 12.

Furthermore, focusing on independent claim 12, Applicants respectfully submit that Pirilä does not disclose a shielding assembly that extends “around the antenna.” Rather, as discussed above, the lid 106 and frame 105 of Pirilä only extend around the transceiver components 104. *See Pirilä*, FIG. 1. Additionally, although Pirilä describes a thin conductive sheet disposed on the inside of the lid 107, this sheet is part of the antenna and, thus, not a shield. Specifically, Pirilä describes the device’s antenna as a “well-known PIFA or Planar Inverted-F antenna.” *See id.* at col. 1, ll. 40-42. This PIFA antenna of Pirilä “comprises...a planar radiator 111.” *See id.* at col. 1, ll. 46-47. Regarding FIGS. 1 and 2, Pirilä states “[t]here are many ways of *implementing the planar*

radiator [111], of which FIGS. 1 and 2 show a thin conductive sheet that is attached to the inner surface of the outer cover 107.” *Id.* at col. 1, ll. 50-52 (emphasis added.) Thus, Pirilä makes clear that the thin conductive sheet on the cover 107 is not a shield for the antenna, but, instead, a part of the *antenna*. Indeed, this sheet—which, again, is described as a “radiator”—is employed by the Pirilä device to receive and transmit (i.e., radiate) signals—not for any sort of shielding. Accordingly, in Pirilä, there is no shielding assembly that extends *around the antenna*, as is recited in claim 12.

Therefore, Applicants respectfully submit that Pirilä does not support a *prima facie* case of anticipation of independent claims 1 and 12 and their respective dependent claims. With the foregoing in mind, Applicants respectfully request reconsideration and allowance of claims 1-19.

Second Rejection Under Section 102

In the Office Action, the Examiner rejected claims 20-28 under 35 U.S.C. § 102(e) as anticipated by Mendolia. In rejecting independent claims 20 and 27, the Examiner stated as follows:

Regarding claim 20, Mendolia et al disclose a system, comprising:
- a plurality of electrical devices (Col. 1, Line 20);
and
- a plurality of radio modules disposed within the plurality of electrical devices to enable the plurality of electrical devices to communicate wirelessly (Col. 1, Line 20), wherein each of the plurality of radio modules comprises an antenna (810) (Fig. 8) disposed within the electrical device and adapted to provide a maximum output at a defined load (Col. 5, Line 19), and a member (806) disposed relative to the antenna [(]810) (Fig. 8) to establish the defined load an [*sic*] the antenna independent of components disposed within the electrical device in which the antenna is disposed (Col. 8, Line 59).

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Regarding claim 27, Mendolia et al disclose a method of manufacturing a radio module for use with an electrical device, comprising:

- tuning an antenna to produce a maximum output at a defined load (Col. 7, Line 23); and
- disposing a shield (806) relative to the antenna (810) to establish the defined load (Col. 8, Line 59) on the antenna independent of influences external to the antenna within the electrical device (Col. 1, Line 20) (Fig. 8).

Office Action, p. 6.

Respectfully, Applicants disagree with the Examiner's assertions and submit that Mendolia does not disclose all of the features recited in the present claims and, thus, does not anticipate these claims. For example, Mendolia does not disclose the following recited elements of independent claim 20:

a plurality of radio modules disposed within the plurality of electrical devices to enable the plurality of electrical devices to communicate wirelessly, wherein each of the plurality of radio modules comprises an antenna disposed within the electrical device and adapted to provide a maximum output at a defined load, and a member disposed relative to the antenna *to establish the defined load on the antenna independent of the components disposed within the electrical device in which the antenna is disposed.*

(Emphasis added.) In stark contrast, Mendolia, like Pirilä, relates to an assembly in which the focus is on shielding *the transceiver components 104*, leaving the antenna 110, 112 susceptible to loading effects. As best illustrated in FIG. 8 of Mendolia, the antenna 810 is disposed on the "outside (upper surface) of the component 800." See Mendolia, col. 8, ll. 62-65. Thus, this antenna 810 is *outboard* of shielding wall 820, which, again, is designed to protect the transceiver components 204 located inboard thereof. Resultantly, the antenna 810 would be susceptible to the loading effects of other components in the electrical device. For instance, in a personal digital assistant (PDA)—an

envisioned use described by Mendolia at column 1, line 20—the placement of the antenna 810 outboard 820 of the shielding wall would leave the antenna 810 susceptible to electrical noise from the display screen, the I/O ports, etc. of the PDA, thus impacting the loading on the antenna 810. Accordingly, Mendolia does not disclose all of the features recited in claim 20.

Furthermore, Mendolia does not disclose all of the features recited in amended independent claim 27. For example, Mendolia does not disclose the act of “disposing a shield relative to the antenna to *establish the defined load on the antenna* independent of influences external to the antenna and within the electrical device.” (Emphasis added.) Instead, as is discussed above, the antenna of Mendolia is disposed *outboard* of the shielding assembly 820 and, thus, susceptible to loading effects of other components of the electrical device in which it is disposed. Again, if employed in a PDA, the antenna 810 of Mendolia would be susceptible *to loading effects* of other necessary components that are also outboard of the shield 820, such as a display screen or input/output devices. Thus, Applicants respectfully submit that Mendolia does not disclose all of the features recited in independent claim 27.

Based on the foregoing, Applicants respectfully submit that Mendolia does not anticipate independent claim 20 and its respective dependent claims 20-24 and 26, nor does it anticipate independent claim 27 and its respective dependent claims 28-29. Accordingly, Applicants respectfully request reconsideration and allowance of claims 20-24 and 26-29.

Claim Rejections under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected dependent claims 19 and 29 under 35 U.S.C. § 103(a) as obvious in view of Pirilä. Applicants, however, respectfully assert that the purportedly “obvious” modification described by the Examiner does not obviate the

deficiencies of Pirilä discussed in relation to independent claim 12, the claim from which claim 19 depends. Furthermore, Applicants note that the Examiner has not alleged that Pirilä renders obvious claim 27, the claim from which claim 29 depends. Accordingly, it cannot be the case that a dependent claim is obvious in view of a reference despite the fact that its base claim is not. In any event, based on the arguments above, Applicants respectfully submit that dependent claim 29 is not obvious in view of Pirilä.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: September 2, 2005



Manish Vyas
Reg. No. 54,516
(281) 970-4545

CORRESPONDENCE ADDRESS
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

HP Responsible Attorney
Phil Lyren
Reg. No. 40,709
(832) 236-5529